Regional Water Quality Control Board
Central Valley Region
Board Meeting – 24/25 April 2008

Response to Written Comments for The Ironhouse Sanitary District Wastewater Treatment Plant Tentative Waste Discharge Requirements

At a public hearing scheduled for 24/25 April 2008, the Regional Water Quality Control Board, Central Valley Region (Regional Water Board) will consider adoption of a new National Pollutant Discharge Elimination System (NPDES) permit and Time Schedule Order for the Ironhouse Sanitary District Wastewater Treatment Plant. A tentative NPDES permit and Time Schedule Order were issued on 11 February 2008. This document contains Regional Water Board staff responses to written comments received from interested persons in response to the proposed Orders. Written comments from interested persons were required to be received by the Regional Water Board by 17 March 2008 for the tentative permit in order to be included in the record. Comments were received by the deadline from the Ironhouse Sanitary District (Discharger or District), Central Valley Clean Water Association, and Delta Diablo Sanitation District. Written comments are summarized below, followed by Regional Water Board staff responses.

DISCHARGER'S COMMENTS

DISCHARGER COMMENT # 1: TSO, Paragraph 8: No Mandatory Minimum Penalty Relief - The TSO should provide relief from mandatory minimum penalties (MMPs) for exceedances of the final effluent limitations for aluminum and manganese. As proposed, the TSO would deny the District the relief from MMPs provided by statute. The Water Code allows an exemption from the imposition of MMPs where the Regional Water Board has issued a TSO to allow time to come into compliance with an effluent limitation that is a new, more stringent, or modified regulatory requirement that has become applicable to the waste discharge "after the effective date of the waste discharge requirements" and after July 1, 2000. (Wat. Code §13385(j) (3)(A).)

> **RESPONSE:** Although the statute is ambiguous, the exception under Section 13385(j)(3) only applies to existing dischargers with reissued NPDES permits. Existing land-discharges from the same facility under non-NPDES WDRs do not meet the requirement to have a reissued NPDES permit. However, all new dischargers and new sources are relieved from MMPs for the startup period described in Section 13385(j)(1)(D).
>
> Allowing new dischargers or new sources to avoid MMPs would be inconsistent with the NPDES regulations, which disallow compliance schedules for new facilities. Section 13385(j)(3) builds upon NPDES compliance schedule provisions. Where a discharger can have a compliance schedule within the permit, MMP relief is not necessary until the final limits take effect. At that point, the Regional Water Board may then allow the discharger to avoid MMPs for an additional five years by issuing an appropriate Cease and Desist Order (CDO) or TSO.

Requirements for compliance schedule and Section 13385(j)(3) schedules are thus not coextensive, since MMPs can be avoided even after the discharger is no longer eligible for a compliance schedule. However, the compliance schedule requirements are still relevant in considering how to interpret Section 13385(j)(3). A compliance schedule is available in the first NPDES permit for a new discharger or a new source only for new objectives or standards that were adopted (i) after the discharger commenced construction and (ii) less than three years before discharges commenced.[1]

MMPs do not apply to a "new or reconstructed wastewater treatment unit" during a period of adjusting or testing, not to exceed 90 days for a wastewater treatment unit that relies on a biological treatment process and not to exceed 30 days for any other wastewater treatment unit.[2] The discharger must meet certain requirements, including submittal of an operations plan describing "the actions the discharger will take during the period of adjusting and testing, including steps to prevent violations and identifies the shortest reasonable time required for the period of adjusting and testing." A "'wastewater treatment unit' means a component of a wastewater treatment plant that performs a designated treatment function." (*Id*.) A CDO or TSO is not required for the startup-period exception to apply.

DISCHARGER COMMENT # 2: TSO – inclusion of iron. If MMP coverage is not provided, then there is no reason to include iron in the TSO because there is no reasonable potential for iron. Thus, if MMP coverage for TSO constituents is not provided, the District requests that iron be removed from the TSO. Necessary text edits then need to be made in the TSO and permit, accordingly.

RESPONSE: The discharge has reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for iron due to no assimilative capacity for iron in the San Joaquin River off Jersey Point. However, based on the estimated maximum effluent concentration, the discharge should be able to meet the new iron effluent limitations. Therefore, the compliance schedule for iron has been removed from the proposed TSO.

DISCHARGER COMMENT # 3: <u>p. 3, A. Background</u>. The following edit is requested by the District to make the statement factually correct. "The Discharger requested a year-round surface water discharge due to lack of adequate ~~treatment,~~ storage and disposal capacity."

[1] 40 CFR § 122.47(a)(2). For recommencing dischargers, schedules of compliance are available only for requirements issued within three years of the recommenced discharger. (*Id*.)
[2] Wat. Code § 13385(j)(1)(D).

RESPONSE: Comment noted and the permit has been modified as suggested by the Discharger.

DISCHARGER COMMENT # 4: <u>p. 11, Table 6. Effluent Limits.</u>

<u>Copper</u>. The reasonable potential analysis for copper was performed using the lowest projected receiving water hardness of 36 mg/L (see F-25), when it should have been based on the lowest projected effluent hardness, as stated in the fact sheet on page F-18: "*For those contaminants whereby the regulatory criteria exhibit a concave downward relationship as a function of hardness (e.g. acute and chronic copper, chromium III, nickel, and zinc, and chronic cadmium), use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or receiving water hardness is higher. …..For purposes of calculating WQBELs for hardness dependent metals, the lowest water supply hardness from January 2007 through August 2007 (124 mg/L as CaCO3) was used to estimate the Discharger's effluent hardness*."

The CTR copper criteria for a hardness of 124 mg/l are: CMC=17.1 ug/l and CCC=11.2 ug/l, expressed as total recoverable metal (CMC=16.5 ug/l and CCC=10.8 ug/l, expressed as dissolved metal. The Basin Plan copper objective is 10.0 ug/l as dissolved, and 10.4 ug/l as total recoverable. The projected MEC for copper is 4.7 ug/l; therefore, there is no reasonable potential for copper and thus it should be removed as an effluent limit.

RESPONSE: The reasonable potential analysis (RPA) is correctly based on the lowest receiving water hardness of 36 mg/L as required in the Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays and Estuaries of California (SIP). In conducting the RPA (Section 1.3 of the SIP), the second trigger is when the background concentration exceeds the applicable water quality criteria (i.e. no assimilative capacity exists in the receiving water). In order to determine if there is assimilative capacity for copper in the receiving water, it is necessary to calculate the CTR criteria using the lowest receiving water hardness. The maximum background concentration of total copper was 6.2 µg/L, based on 48 samples collected between March 1993 and March 2007. This exceeds both the acute and chronic CTR criteria for copper. Consequently, the discharge has reasonable potential to cause or contribute to an exceedance of the CTR criteria for copper and federal regulations require an effluent limit for copper.

For purposes of calculating water quality-based effluent limitations (WQBELs) for hardness dependent metals, using the lowest effluent hardness results in protective WQBELs for contaminants whereby the regulatory criteria exhibit a concave downward relationship as a function of hardness (e.g. acute and chronic copper). Therefore, although the receiving water hardness must be used to determine if assimilative capacity exists in the receiving water, the WQBELs may

be calculated using the effluent hardness. In this case, since there is currently no discharge, the lowest water supply hardness from January 2007 through August 2007 (124 mg/L as CaCO3) was used to estimate the Discharger's effluent hardness. The WQBELs for copper are based on the estimated lowest hardness for the water supply.

Fluoride. The primary MCL for fluoride is 2000 µg/L. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 1000 µg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The estimated MEC for fluoride is 1000 µg/L based on 1 influent sample. The long-term average fluoride effluent concentration is expected to be below 1000 ug/l, as is typically seen in WWTP effluents (e.g., City of Vacaville, City of Placerville, City of Brentwood). The background receiving water maximum fluoride is 72 µg/L in 46 sampling events collected by the Discharger and other agencies from January 2003 through March 2007. These data show that the receiving water has assimilative capacity for fluoride and that there is not reasonable potential for fluoride for the MCL (on an instantaneous basis) or the agricultural goal on a long-term average basis.

Because reasonable potential for fluoride does not exist, the District requests that the fluoride effluent limitation be removed from the order.

RESPONSE: Reasonable potential for fluoride exists because the estimated maximum effluent concentration of fluoride is 1000 mg/L and is equal to the lowest (most stringent) water quality objective, which is based on the agricultural water quality goal recommended by Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The SIP, Section 1.3 (Step 4), states, "If the MEC is greater than or equal to the C, an effluent limitation is required and the analysis for the subject pollutant is complete" The RPA does not include the use of dilution factors or time basis of the water quality objective. The calculated effluent limitation in the tentative Order incorrectly excluded background fluoride in the San Joaquin River. The correct limitation is 19.6 mg/L instead of 21.0 mg/L. The permit has been changed to reflect this correction.

DISCHARGER COMMENT # 5: p. 12, g. Average Daily Discharge Flow. This limitation should be modified as follows to accurately reflect the basis for the treatment capacity of the WWTP:

"Average ~~Daily~~ Dry Weather Discharge Flow. The Average ~~Daily~~ Dry Weather Discharge Flow shall not exceed 4.3 mgd."

Similar changes are required on pp. F-15 (section b. Flow) and F-15 (footnote #1, Table F-2).

> **RESPONSE:** Regional Water Board staff agree with this modification and the change is made through out the permit.

DISCHARGER COMMENT # 6: <u>p. 14, Bacteria.</u> The receiving water limitation for fecal coliform bacteria of 200/400 MPN/100 mL is unnecessary. The effluent limitation for total coliform, which consists of fecal coliform and other coliform, is much lower at 2.2/23/240 MPN/100 ml. Thus, the effluent could never cause an exceedance of the receiving water limitation.

> **RESPONSE:** The Basin Plan requires the fecal coliform bacteria limitation of 200/400 MPN/100 ml for the receiving water. However, staff agrees the effluent could never cause an exceedance of the receiving water limitation if the discharge meets the effluent limitation of 2.2/23/240 MPN/100 ml. Therefore, the requirement for monitoring of the receiving water for fecal coliform is eliminated and compliance with the receiving water limitation will be determined based on compliance with the effluent limitation for total coliform organisms.

DISCHARGER COMMENT # 7: <u>d. Pollution Prevention.</u> Based on comments above, iron and copper should be removed from this requirement and all other places in the permit where it appears in relation to pollution prevention plans (PPPs) (see p. F-60) or other compliance schedule related requirements.

> **RESPONSE:** Regional Water Board staff agrees. The proposed permit has been modified to reflect this change.

DISCHARGER COMMENT # 8: <u>p. 23. j. Water Reclamation</u>. The district requests the following edit: "This Order requires the Discharger to <u>continue its ongoing</u> evaluatio<u>n</u>~~e~~ of water…"

> **RESPONSE:** Comment noted and the proposed Order has been modified to reflect this change.

DISCHARGER COMMENT # 9: <u>p. 26, c. Reclamation Study.</u> The District requests that this study be referred to as a "<u>Regional reuse study</u>."

After consideration of the above, the District's requests the following modifications to the Order:

(p. 25) "The Discharge shall conduct a wastewater ~~reclamation~~ regional reuse study. The study will identify existing and potential ~~reclaimed~~ industrial recycled water users and include an economic analysis of ~~reclaiming~~ recycling wastewater to these users. The Discharger shall complete and submit the study ~~prior to initiating discharge to the San Joaquin River and~~ no later than 31 December 2008. The Discharger shall also update its past reuse study to look at reuse opportunities (landscape, golf course irrigation, etc) within the Discharger's service area during the term of this Order."

RESPONSE: The comment is noted and the modifications are reflected in the proposed Order.

DISCHARGER COMMENT # 10: p. 29 7. Compliance Schedules – a. Initiation of Surface Water Discharge.

The District requests the following edit.

iii. ~~**Adoption of**~~ **Submit Report of Waste Discharge for Renewal of Waste Discharge Requirements (WDRs).** The Discharger shall submit a Report of Waste Discharge for land disposal and reclamation, based on the new Facility, 6 months prior to initiating surface water discharge. ~~and the Regional Water Board adopts new WDRs to regulate the discharges to land.~~

Same change is required on p. F-62.

RESPONSE: Regional Water Board staff agree with the comment and proposed Order is changed to reflect this comment.

DISCHARGER COMMENT # 11: p. 29 VII. Compliance Determination. This section requires the following addition:

"**E. Mass Effluent Limitations.** Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring."

RESPONSE: Regional Water Board staff agree with the comment and has modified the proposed Order.

DISCHARGER COMMENT # 12: p. 30 – D. Average Dry Weather~~Daily Discharge~~ Flow Effluent Limitation~~s~~. The District requests the following edits. "The Average Dry Weather ~~Daily Discharge~~ Flow represents the average ~~dry weather flow discharged by~~

~~the Facility (i.e. daily average~~ of daily flows when groundwater is at or near normal and runoff is not occurring~~)~~. Compliance with the Average Dry Weather ~~Daily Discharge~~ Flow effluent limitation~~s~~ will be determined annually based on the average of daily flows over three consecutive dry weather months (e.g., July, August, and September).

RESPONSE: Regional Water Board staff do not agree with the comment. See response to DISCHARGER COMMENT # 5.

DISCHARGER COMMENT # 13: p. E-2, Table E-2, Influent Monitoring. The District is constructing a state-of-the-art, title 22 quality facility, which will produce high quality effluent consistently. There is no need to monitor influent BOD and TSS 7 days/week, and doing so places an unnecessary weekend laboratory staffing burden on the District and unnecessary additional monitoring cost burden. The District requests that the 1/day monitoring requirement for these constituents on the influent be changed to 5 days/week consistent with the recently adopted permit for the City of Brentwood, which is located in the same vicinity, discharging to Marsh Creek. Moreover, recently adopted permits for the City of Davis required influent BOD and TSS monitoring only 3 days/week and the Tentative Order for the City of Placerville requires influent BOD and TSS monitoring only 2 days/week. The District's request is shown below.

(6) Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	
BOD 5-day 20°C	mg/L	24-hr Composite[1]	~~1/day~~5 day/week	
Total Suspended Solids	mg/L	24-hr Composite[1]	~~1/day~~5 day/week	
pH	pH units	Grab	~~1/day~~5 day/week	
TDS	mg/L	24-hr Composite[1]	1/month	
Electrical Conductivity @ 25°C	µmhos/cm	24-hr Composite[1]	~~1/day~~5 day/week	

[1] 24-hour flow proportional composite

RESPONSE: Regional Water Board staff agree and the changes are reflected in the Monitoring and Reporting Program for the proposed Order.

DISCHARGER COMMENT # 14: p. E-3, Table E-3, Effluent Monitoring. The District reiterates the comment above in reference to BOD, TSS, and coliform monitoring for the effluent, and requests the following modifications to Table E-3. In addition, the plant being constructed will completely nitrify and denitrify. Therefore, the District requests that ammonia monitoring be consistent with that of nitrate and nitrite at 1/month.

In addition, there is no reasonable potential for copper (see comment above) and, thus, it should be removed as an effluent limit.

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	mgd	Meter	Continuous	
Total Residual Chlorine[1]	mg/L	Grab	2/day[11]	
Turbidity	NTU	Meter	Continuous	
Temperature	°F	Meter	Continuous	
pH	pH units	Meter	Continuous	
BOD 5-day 20°C	mg/L	24-hr Composite[8]	~~1/day~~5 day/week	
Total Suspended Solids	mg/L	24-hr Composite[8]	~~1/day~~5 day/week	
Total Coliform Organisms	MPN/100 mL	Grab	~~1/day~~5 day/week	
Settleable Solids	mL/L	Grab	1/month	
Dissolved Oxygen	mg/L	Grab	~~1/day~~5 day/week	
Electrical Conductivity @ 25°C	µmhos/cm	Grab	~~1/day~~5 day/week	
Ammonia (as N) [2,3]	mg/L	Grab	~~1/week~~1/month	
Nitrate (as N)	mg/L	Grab	1/month	
Nitrite (as N)	mg/L	Grab	1/month	
~~Copper~~	~~µg/L~~	~~24-hr Composite[6]~~	~~1/month~~	

RESPONSE: Regional Water Board staff agrees with the reduced monitoring for BOD, TSS, Total Coliform Organisms, Dissolved Oxygen, and Electrical Conductivity and have modified the proposed Order accordingly. However, staff disagrees with reduced monitoring for ammonia and the elimination of copper monitoring. As discussed in the response to DISCHARGER COMMENT # 4, reasonable potential exists for the discharge to exceed copper CTR water quality criteria, thus an effluent limitation is required and monitoring is necessary to determine compliance. Ammonia is highly toxic to aquatic life and is an indicator of proper plant operation. Weekly monitoring is consistent with monitoring at other wastewater treatment plants, and is necessary to ensure the wastewater treatment plant is operating properly. No changes have been made to the copper and ammonia monitoring requirements.

DISCHARGER COMMENT # 15: **p. E-5, E-6 V.A.1. (Acute) and V.B.1. (Chronic) Monitoring Frequency.** The requirement for weekly acute bioassays is excessive and unjustified for several reasons. First, the plant will be a new, state-of-the-art tertiary facility. Plants of this type do not have issues with acute toxicity in their undiluted

effluent. Second, this plant will discharge into a large river though a diffuser, thereby rapidly diluting the effluent. In such cases, acute toxicity would simply not occur in the receiving water. Third, the frequency typically permitted for acute bioassays ranges from monthly to quarterly in recently adopted Orders and in Draft Orders for Roseville and Placerville. Nevertheless, the District also understands the need to evaluate discharges to Delta waters closely due to the Pelagic Organism Decline and other Delta water quality issues. Consequently, the District requests the following:

1. ***Monitoring Frequency*** – the Discharger shall perform weekly acute toxicity testing <u>for the first six months following initiation of discharge and monthly thereafter</u>, concurrent with effluent ammonia sampling.

The same comment is made for chronic whole effluent toxicity testing. Therefore, the District requests that staff permit the frequency typically permitted for chronic 3-species bioassays, which is quarterly or less frequent in recently adopted Orders and in Draft Orders for Roseville and Placerville. Consequently, the District requests the following:

1. ***Monitoring Frequency*** – the Discharger shall perform monthly three species chronic toxicity testing <u>for the first 6 months following initiation of discharge and quarterly thereafter</u>.

RESPONSE: All the wastewater treatment plants cited in the comment have a record of operation and have both acute and chronic toxicity testing data. The Ironhouse wastewater treatment plant has not been constructed and has no record of operation or any toxicity data. In addition, the discharge is to a 303(d) listed waterway for unknown toxicity. However, Regional Water Board staff agrees that after a certain amount of toxicity monitoring demonstrating the effluent consistently meets the permit toxicity requirements, the monitoring frequency could be reduced. Therefore, the acute and chronic whole effluent toxicity testing frequency has been modified in the proposed Order as follows:

Acute Toxicity Testing Frequency

<u>*Monitoring Frequency*</u> – the Discharger shall perform weekly acute toxicity testing, concurrent with effluent ammonia sampling. <u>If the discharge does not exceed the acute toxicity effluent limitations during the first six (6) months following initiation of discharge, the monitoring frequency may be reduced to monthly.</u>

Chronic Toxicity Testing Frequency

Monitoring Frequency – the Discharger shall perform monthly three species chronic toxicity testing. If the Discharger is not required to initiate a Toxicity Reduction Evaluation during the first twelve (12) months following initiation of discharge (per Section VI.C.2.a. of the Limitations and Discharge Specifications), the monitoring frequency may be reduced to quarterly.

DISCHARGER COMMENT # 16: p. E-6, 7. Dilutions. The Discharger request the following correction be made as follows:

"If the receiving water is toxic, laboratory water may be used as the ~~dilute~~ diluent, in which case, …"

RESPONSE: Comment noted and typographical error has been corrected.

DISCHARGER COMMENT # 17: p. E-8 Table E-5, Receiving Water Monitoring. The Tentative Order specifies monitoring locations at 7 miles upstream and 3 downstream of the outfall, in addition to locations 500 feet upstream and downstream of the outfall. There will be no measurable effect of the discharge on dissolved oxygen (DO), pH, temperature, turbidity and fecal coliform at these distances due other influences in the Delta including recreation, photosynthesis, natural processes, agricultural activities and urban runoff.

Any monitoring data reported from these locations would be subject to all these caveats, basically rendering it useless for compliance assessment. With no ability to use these monitoring stations to directly assess the impact of the WWTP discharge or compliance with receiving water limitations, there is no rationale to require monitoring at these locations. Moreover, due to small craft advisories that are posed for this water body on windy days, or due to fog, which limits visibility on the river, it is not always possible to collect such data.

Based on the rationale provided above, the District requests that the monitoring stipulated in Table E-5 be changed from weekly to 2/month for the first year following initiation of discharge, and monthly thereafter. The District also requests that fecal coliform monitoring be eliminated entirely because it is not possible for the discharge to cause an exceedance of the receiving water coliform objective.

Following collection of a year's receiving water data, these data shall be evaluated for their utility for compliance assessment purposes by board staff, and, based on this evaluation, the Executive Officer shall determine whether the receiving water monitoring for this facility should be continued or ceased, based on its utility for compliance assessment purposes.

RESPONSE: Regional Water Board staff agree with the comment on fecal coliform, see response to DISCHARGER COMMENT # 6. Staff also agree that

no monitoring should occur when unsafe conditions exist and has modified the monitoring requirements appropriately. Furthermore, staff agree that weekly receiving water monitoring may be excessive, due to the large dilution in the receiving water. Therefore, to be consistent with other NPDES permits for dischargers in the vicinity, the receiving water monitoring has been reduced to monthly during the first year and may be reduced to quarterly thereafter. RSW-001 and RSW-004 will not be required monitoring locations for the receiving water, instead these two locations will be monitored for the constituent study.

DISCHARGER COMMENT # 18: <u>p. F-4, II. Facility Description</u>. The following edit is requested by the District to make the statement factually correct. "Due to a lack of adequate ~~treatment,~~ storage, and disposal capacity, the Discharger requested a year-round surface water discharge of tertiary treated effluent with ultraviolet (UV) light disinfection to the San Joaquin River off of Jersey Island."

RESPONSE: Regional Water Board staff agree, see response to DISCHARGER COMMENT # 3.

DISCHARGER COMMENT # 19: <u>p. F-7, 2. Thermal Plan.</u> The first paragraph should be modified as follows to correctly cite the applicable Thermal Plan requirements: "The Ironhouse Sanitary District discharge is a "new elevated temperature waste" as described in the Thermal Plan. Thus, the discharge must meet ~~5.A. (2)~~ <u>5.B(1)</u> of the Plan ~~and are described~~ as follows…"

RESPONSE: The Fact Sheet has been clarified with regards to this comment.

DISCHARGER COMMENT # 20: <u>p. F-10, Water Reuse Policy – Land Only Discharge</u>. The following modification is needed to the second sentence of the fourth paragraph. Delete, ~~"The irrigation disposal and percolation from treatment ponds on the mainland has caused problems for Contra Costa Water District's canal water quality as well as degrading groundwater quality near the treatment plant."~~ Replace with, "<u>From studies, degradation of groundwater beneath ISD's wastewater treatment plant and irrigated lands on the "mainland" property may have occurred or has the potential to occur. In addition, the studies did not demonstrate that the discharge of waste to land at the facility does not impact, or threaten to impact, the beneficial uses of the Contra Costa Canal</u>."

RESPONSE: Regional Water Board staff agree with the proposed changes, but have modified the language to be more clear. The fourth paragraph of Section III.C.9. of the Fact Sheet has been modified as follows:

Land Only Discharge -The Discharger is currently permitted to discharge up to 3 mgd of disinfected secondary treated wastewater by irrigating pastureland and fodder crops adjacent to the treatment facilities (mainland) and on Jersey Island. ~~The irrigation disposal and percolation from treatment ponds on the mainland has caused problems for Contra Costa Water District's canal water quality as well as degrading groundwater quality near the treatment plant. Regional Water Board staff is concerned over continued degradation of the groundwater by unlined storage and irrigation with non-nitrified/denitrified secondary effluent.~~ Based on studies, groundwater degradation beneath ISD's wastewater treatment plant and irrigated lands on the mainland property has the potential to occur or may have already occurred due to unlined storage and irrigation with non-nitrified/denitrified secondary effluent. In addition, there are concerns of potential impacts to the beneficial uses of the Contra Costa Canal. Additional disposal land adjacent to the treatment plant for treatment and disposal is limited due to proposed enhancement wetlands. Although the Discharger owns substantial land, over 3400 acres on Jersey Island, all of the island is below the level of the San Joaquin River, requiring continuous dewatering of the island with groundwater discharge to the San Joaquin River. The dewatering system maintains the groundwater level between 2 – 4 feet below ground surface. During winter, the groundwater level can be less than 1 foot below ground surface.

DISCHARGER COMMENT # 21: p. F-11, second to last paragraph - study and reopener. The District requests the following edits: "This Order includes a compliance schedule for initiating a surface water discharge that requires the Discharger to complete its ongoing reuse ~~conduct the reclamation~~ study and provide the results of the study to the Regional Water Board. This Order may be reopened based on the results of the reclamation study."

RESPONSE: Comment noted and change is included in the Fact Sheet.

DISCHARGER COMMENT # 22: p. F-17, b. Hardness. The following modifications are needed to clarify the derivation of the total recoverable metals criteria.

"The general equation describing the ~~total recoverable regulatory criterion~~ CTR criteria is as follows:

H = site Hardness

The constants "m" and "b" are specific to both the metal under consideration, and the type of ~~total recoverable~~ criterion (i.e. acute or chronic)…

First sentence of the fifth paragraph: "Because of the non-linearity of the ~~Total Recoverable C~~criterion equation…"

RESPONSE: Response is noted and changes are included in the Fact Sheet.

DISCHARGER COMMENT # 23: <u>p. F-18, c. Assimilative Capacity/Mixing Zones.</u> This section should state the dilution at the edge of the zone of initial mixing (20:1) and the edge of the tidal mixing zone (1,000:1). Recommend the following addition.

> c. **Assimilative Capacity/Mixing Zones.** …..The Discharger is proposing to construct a 150-foot outfall diffuser that will be at a depth of at least 20 to 30 feet and extends 550 feet offshore. The average tidal flow is 150,000 cubic feet/second (cfs) and the design capacity of the discharge is 6.5 cfs. <u>Based on these factors, the dilution at the edge of the zone of initial mixing will be 20:1 and the dilution at the edge of the tidal mixing zone will be 1,000:1…..</u>

RESPONSE: The requested change has been made to the Fact Sheet.

DISCHARGER COMMENT # 24: <u>p. F-29 q. Nitrate and Nitrite.</u> The fact sheet states: "*Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. The conversion of ammonia to nitrites and the conversion of nitrites to nitrates present a reasonable potential for the discharge to cause or contribute to an in-stream excursion above the Primary MCLs for nitrite and nitrate. A human health dilution factor of 1000 is not allowed for nitrate plus nitrite, because the environmental effects of nitrate may occur over short durations. Therefore, a dilution factor of 20 was considered for this constituent and an AMEL of 205 mg/L for nitrate plus nitrite. However, the Dischargers Antidegradation Analysis was based on the USEPA primary MCL of 10 mg/L. Based on the Discharger's Antidegradation analysis and due to the fact that the Facility will include denitrification, an AMEL of 10 mg/L is included in this Order to ensure compliance with Resolution 68-16. This effluent limitation is included in this Order to assure the treatment process adequately denitrifies the waste stream to protect the beneficial use of municipal and domestic supply. After the plant has operated and evaluated its performance this Order may be reopened to establish a more stringent performance-based limit*."

There are numerous problems with these findings. First, it is stated that the plant may not perform as designed and thus reasonable potential exists. This statement is not justified or supported in any way. Moreover, two sentences later the finding states: "…*due to the fact that the Facility will include denitrification, an AMEL of 10 mg/L is included…"* implying that the designed facilities will meet 10 mg/l or better. If the latter is true, then no reasonable potential exists, particularly with the available dilution. Second, the "environmental effects" that could occur over short distances are not defined. The T.O. assumes only 20:1 dilution, which occurs in the zone of initial mixing,

implying that drinking water supplies will be diverted from within the zone of initial mixing, which will not occur. Finally, there is no justification to reopen this order to impose more stringent performance-based limits for these constituents given that the proposed limitations are already many times more stringent than required to protect beneficial uses. The District requests the following modifications.

"*~~Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. The conversion of ammonia to nitrites and the conversion of nitrites to nitrates present a reasonable potential for the discharge to cause or contribute to an in-stream excursion above the Primary MCLs for nitrite and nitrate. A human health dilution factor of 1000 is not allowed for nitrate plus nitrite, because the environmental effects of nitrate may occur over short durations. Therefore, a~~ A dilution factor of 20 was considered for this constituent in order to assure that the drinking water MCLs would be met at the edge of the zone of initial mixing, which resulted in ~~and~~ an AMEL of 205 mg/L for nitrate plus nitrite. ~~However, the Dischargers Antidegradation Analysis was based on the USEPA primary MCL of 10 mg/L. Based on the Discharger's Antidegradation analysis and due to the fact that the Facility will include denitrification, an AMEL of 10 mg/L is included in this Order to ensure compliance with Resolution 68-16.~~ This effluent limitation is included in this Order to assure the treatment process adequately denitrifies the waste stream to protect the beneficial use of municipal and domestic supply. ~~After the plant has operated and evaluated its performance this Order may be reopened to establish a more stringent performance-based limit.~~*"

The District will modify its Antidegradation analysis to show degradation for nitrate and nitrite in order to support this modified fact sheet finding.

> **RESPONSE:** Regional Water Board staff disagrees with the above comment. Section 1.3 of the SIP at Step 7 allows the permit writer to, "*Review other information available to determine if a water quality-based effluent limitation is required, notwithstanding the above analysis in Steps 1 through 6, to protect beneficial uses.*" Due to the implementation of ammonia effluent limitations in the proposed Order, the Discharger will be required to nitrify the wastewater, resulting in high levels of nitrate. Therefore, incomplete denitrification represents reasonable potential to cause or contribute to an exceedance of the applicable water quality objective for nitrate in the receiving water. As part of its Environmental Impact Report and its Antidegradation Analysis, the Discharger proposed to construct denitrification facilities in order to meet best practicable treatment or control of the discharge, in accordance with Resolution 68-16. Consequently, effluent limitations for nitrate are included in the proposed Order consistent with the Discharger's evaluations. Allowing less stringent effluent limitations would not be consistent with the state and federal Antidegradation policies.

DISCHARGER COMMENT # 25: **p. F-34, ii EC.** There is no discussion of 440/450 criteria. A reference should be added in a footnote or in finding.

RESPONSE: Clarifying language has been added to the Fact Sheet.

DISCHARGER COMMENT # 26: **p. F-35, after table F-5.** The following edit is needed: "The expected annual average effluent EC is 1376~~1200~~ µhmos/cm, and at times the receiving water exceeds the Basin Plan's site-specific objectives for EC." This represents current average.

RESPONSE: Comment noted and the Fact sheet has been modified.

DISCHARGER COMMENT # 27: **p. F-40.** WQBEL calculation tables are missing for nitrate and fluoride.

RESPONSE: The WQBEL for nitrate is simply based on the Discharger's Antidegradation Analysis, so no calculations were performed. A table showing the WQBEL calculation for fluoride has been added to the Fact Sheet. In preparing the table an error was discovered in the original effluent limitation calculation for fluoride. The background fluoride concentration was not considered in the calculation of the effluent limit. Consequently, the effluent limitation has been changed from 21 mg/L to 19.6 mg/L.

DISCHARGER COMMENT # 28: **p. F-43. Mass-based Effluent Limitations.** The District requests the following edits: "*Mass-based effluent limitations were calculated based upon the permitted average dry weather~~daily discharge~~ flow allowed in Section IV.A.1.g. of the Limitations and Discharge Requirements*."

RESPONSE: Regional Water Board staff agrees and have modified the second paragraph of Section IV.D.1. of the Fact Sheet as follows:

> Mass-based effluent limitations were calculated based upon the ~~permitted~~ design average ~~daily discharge~~dry weather flow ~~allowed in Section IV.A.1.g. of the Limitations and Discharge Requirements~~of 4.3 mgd.

DISCHARGER COMMENT # 29: **p . F-54. C.1. Acute Toxicity.** The permit states: "*1. Acute Toxicity. Weekly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity. The Delta is 303(d) listed for unknown toxicity. Therefore, to comply with Resolution R5-2007-0161 requires the Regional Board to assess unknown toxicity weekly instead of monthly. Pending the results of the toxicity sampling, the monitoring frequency maybe re-evaluated for this Order*."

Nowhere in Resolution R5-2007-0161 does it stipulate that acute toxicity for POTWs needs to be monitored weekly instead of monthly. As stated above, the plant will be a new, state-of-the-art tertiary facility. Plants of this type do not have issues with acute toxicity in their undiluted effluent. Moreover, this plant will discharge into a large river through a diffuser, thereby rapidly diluting the effluent. In such cases, acute toxicity would simply not occur in the receiving water due to the effluent. The fact that the receiving water is currently 303(d) listed for unknown toxicity clearly has nothing to do with this plant's proposed effluent discharges. Weekly monitoring is excessive and cannot be justified, and thus should be changed to monthly.

RESPONSE: Comment is noted and the Fact Sheet modified to eliminate reference to Resolution R5-2007-0161.

DISCHARGER COMMENT # 30 p. F-60. 3.a. PPP. Edit per other comments.

RESPONSE: Comment noted, see response to DISCHARGER COMMENT # 7.

CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA)

CVCWA COMMENT # 1: TSO, No Mandatory Minimum Penalty Relief – Central Valley Clean Water Association echos the Discharger's concern on no protection from Minimum Mandatory Penalties for aluminum and manganese in the Time Schedule Order. CVCWA expects this to be an issue in the future with other communities changing from land disposal to surface water discharge.

RESPONSE: See response to DISCHARGER COMMENT # 1.

DELTA DIABLO SANITATION DISTRICT (DDSD) COMMENTS

DDSD COMMENT # 1: Both DDSD and ISD have studied a potential integrated regional wastewater treatment solution since 2005. Two alternatives were included in ISD's Final Supplemental Environmental Impact Report (FSEIR) certified by the ISD Board on 16 January 2008. Both these alternatives included pipelines to New York Slough within the San Francisco Regional Water Quality Control Board (Region 2), where DDSD currently discharges treated wastewater into the San Joaquin River. The advantages of discharging at New York Slough include discharging into brackish waters eliminating the salinity concerns of ISD's discharge at Jersey Point and the potential for recycling treated wastewater to existing and potential power generators.

ISD Board chose to construct a new tertiary wastewater treatment plant with ultraviolet disinfection and continue land disposal as well as discharge to the Delta. The tentative NPDES permit creates a great uncertainty in terms of the feasibility and treatment costs

for constituents, including aluminum, iron, manganese, mercury, and salinity. The added costs to construct and operate the new treatment and discharge facilities, and the levels or certainty should be considered prior to moving forward with an individual discharge project, rather than an integrated regional solution.

DDSD continues to see great opportunities to work with IS to develop and integrated regional solution if a decision is made to pursue that.

RESPONSE: Comment noted.